Guidelines for the Prevention and Control of Influenza in Nursing Homes and Long-Term Care Facilities

Contents

Background and Rationale for Recommendations

The Virginia Department of Health (VDH) recommends taking the general steps outlined below to prevent the spread of influenza in nursing homes and other long-term care facilities. Planning and preparation activities should take place before the beginning of the influenza season, which can start as early as October and may continue through May. Additional activities are recommended when a resident develops an influenza-like illness (ILI). Further actions may be required if many cases develop and an outbreak (or suspected outbreak) occurs.

The local health department has staff with experience and expertise in the management of respiratory illness in nursing homes and other long-term care facilities. They are available for consultation before the influenza season and as needed throughout the influenza season. To find the local health department nearest you, go to: http://www.vdh.virginia.gov/local-health-districts/. Facility managers are reminded that an outbreak or suspected outbreak of influenza or influenza-like illness must be reported to the local health department immediately per Virginia disease reporting regulations (12 VAC 5-90-90).

These recommendations take into consideration the highly transmissible nature of the influenza virus, which spreads primarily by large droplets produced when an infected person coughs or sneezes. The droplets can travel short distances through the air (usually not more than 6 feet) and enter the nose/throat of a person in close contact, where the virus grows and causes infection. The influenza virus can survive on a person's hands, surfaces, or objects (e.g., environmental surfaces, medical equipment) for several hours. The virus is killed by soap and water, hand sanitizers, and the cleaning/disinfecting agents used in routine environmental cleaning.

Although anyone can get influenza, certain groups are at high risk for developing serious flu-related complications (e.g., pneumonia, inflammation of organs, multi-organ failure), that result in hospitalization and sometimes death. These groups include the following:

- Children aged less than 5 years;
- Adults aged 65 years or older;
- Pregnant women and women up to two weeks postpartum;
- Residents of nursing homes and other long-term care facilities;
- American Indians and Alaska Natives;
- People who have a medical condition, such as asthma, neurological and neurodevelopmental condition, chronic lung disease, heart disease, blood disorder, endocrine disorder (including

diabetes), kidney disorder, liver disorder, metabolic disorder, weakened immune system because of disease or medication, people younger than 19 years who are receiving long-term aspirin therapy, and people with extreme obesity (body mass index of 40 or more).

Nursing homes and other long-term care facilities house individuals with increased risk for developing serious complications. Unlike younger and healthier individuals, older individuals and residents of long-term care facilities might not exhibit symptoms typical of influenza, such as fever, dry cough, headache and muscle aches. Older and debilitated individuals might have little or no fever, might not complain of pain, and might be lethargic or less alert. Their influenza infection might not be obvious until they are very ill. In addition, without strict infection prevention precautions, the extensive care that nursing home residents require might facilitate the transmission of the virus from one resident to care providers or other residents.

Planning and Preparation Activities

The facility's preparation and prevention activities should be collaborative efforts between facility leadership (e.g., Medical Director, Director of Nursing) and other staff members involved with infection prevention. The following steps are recommended in advance of the influenza season:

Vaccination and Antiviral Medications

- Implement a standing orders program so the facility will be prepared to rapidly administer vaccinations and antiviral medications in the event of an influenza outbreak. These procedures authorize nurses and pharmacists to administer vaccinations or medications without a physician's exam, in accordance with an institution- or physician-approved protocol.

- To comply with state regulations (12 VAC 5-371-110) regarding resident vaccination:
    - Ensure that all residents receive influenza vaccine in accordance with current Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommendations unless the vaccine is contraindicated or the resident declines the vaccination.
    - Review residents' medical records to identify individuals who should receive pneumococcal vaccine and arrange to administer the vaccination unless it is contraindicated or the resident declines the vaccination.

- Strongly encourage all facility workers, volunteers, and visitors to receive influenza vaccine in accordance with CDC/ACIP recommendations.

- Keep track of resident and staff vaccinations by maintaining vaccination logs.

- Develop a plan for the use of influenza antiviral medications in the facility in consultation with facility managers, healthcare providers, and the local health department. The use of antiviral medications for prophylaxis and treatment should be considered part of the facility's overall influenza prevention and control strategy, not just a tool for the individual case management of ill residents and staff.
    - Review residents' medical records and note known contraindications to the use of antiviral drugs.

Surveillance

- Ensure that all residents are monitored daily for signs and symptoms of respiratory infection. Monitoring should occur year round so facility management knows what is normal for the facility and can quickly identify an increase in illness rates or a change in severity of illness. All care providers should be familiar with the signs and symptoms of respiratory illness in their residents.
    - Monitoring should be done in a standardized way, and staff in-service sessions should be held periodically to be sure that all personnel monitor and record their findings in a consistent manner.
    - Maintain a daily log of residents with flu-like illness symptoms in a central location and review the logs regularly so an increase in the number of infections can be identified quickly.
    - Examples of illness logs are available and can be modified to meet the needs of the facility: http://www.vdh.virginia.gov/content/uploads/sites/3/2016/03/RespiratoryIllnessLog-Residents.xls (for residents) and http://www.vdh.virginia.gov/content/uploads/sites/3/2016/03/RespiratoryIllnessLog-Staff.xls (for staff).

- Have contact information for the local health department readily available so your facility will be prepared to call if an outbreak is suspected. See the VDH website at http://www.vdh.virginia.gov/local-health-districts/ to locate contact information for your local health department.

Education and Communication

- Review infection control measures (e.g., standard precautions, droplet precautions, hand hygiene) with staff and residents to familiarize them with the requirements of each.
    - *Standard precautions* mean that gloves should be worn if hand contact with respiratory secretions, other body fluids, or potentially contaminated surfaces is anticipated. Gowns are worn if soiling of clothes with respiratory secretions or body fluids is anticipated. Hand hygiene is performed before and after touching the resident and after contact with respiratory secretions or contaminated objects/materials. Soap and water must be used if hands are visibly soiled or contaminated; otherwise, alcohol-based hand gels may be used.
    - *Droplet precautions* mean that a face mask (e.g., surgical or procedure mask) should be worn when entering an ill person's room. If substantial spraying of respiratory fluids could occur, gloves and gown as well as goggles (or a face shield in place of goggles) should be worn. Perform hand hygiene before and after touching the resident and after contact with respiratory secretions or contaminated objects/materials. The face mask should be removed and disposed of when exiting the resident's room.
    - Additional information on standard and transmission-based precautions (i.e., droplet, contact, and airborne precautions) can be found on the VDH Healthcare-Associated Infections website: http://www.vdh.virginia.gov/surveillance-and-investigation/hai/.

- Remind residents, facility workers, volunteers, and visitors of the importance of hand hygiene and respiratory hygiene (e.g., covering the mouth and nose with a tissue when coughing or sneezing) throughout the year by posting signs and conducting educational activities. Signs suitable for printing are available from VDH at http://www.vdh.virginia.gov/epidemiology/influenza-flu-in-virginia/influenza-information-for-healthcare-professionals-and-facilities/ and CDC at https://www.cdc.gov/flu/resource-center/freeresources/print/index.htm.

- Encourage all persons who enter the facility (including employees, volunteers, contractors, regular visitors, and others) to monitor themselves daily for influenza-like illness (fever with cough and/or

sore throat) and stay at home when they are sick. CDC recommendations are to stay home for at least **24 hours** after fever has resolved without the use of fever-reducing medicines. This is especially important during influenza season.

- Prepare signs and letters for use if visitors must be limited or other restrictions may be necessary during the influenza season. Signs and posters suitable for printing are available from VDH (http://www.vdh.virginia.gov/epidemiology/influenza-flu-in-virginia/influenza-information-for-healthcare-professionals-and-facilities/) and CDC (https://www.cdc.gov/flu/resource-center/freeresources/print/index.htm).

Supplies

- Ensure that adequate supplies are readily available. This includes hand hygiene supplies (e.g., soap, paper towels, hand sanitizer with at least 60% alcohol), personal protective equipment (e.g., gloves, gowns, face shields, masks), as well as other items, such as tissues and trash containers.

Other Policies and Procedures

- Establish policies and procedures for screening newly admitted residents for respiratory illness. Advise personnel to use droplet precautions on newly admitted residents with respiratory symptoms until influenza has been ruled out. Residents being transferred from a facility with a known influenza outbreak should be placed in a separate room apart from other residents, even if asymptomatic, for up to 7 days. If unvaccinated, all new residents should receive the current seasonal influenza vaccine unless it is contraindicated.

Management of an Influenza Outbreak in a Long-Term Care Facility

Facility management should immediately contact the local health department if an increase in cases of influenza-like illness is observed. Working together, the facility and health department can develop prevention and control measures appropriate for the facility.

- Review immunization logs for residents and staff to identify susceptible individuals. Administer vaccine in accordance with CDC/ACIP recommendations. Influenza vaccine can be administered after an outbreak has started.

- Consult with the local health department regarding diagnostic testing for influenza and other respiratory viruses. See the section on laboratory testing (below) for more information.

- Consult with the medical director, individual healthcare providers (if applicable), and the local health department regarding the use of antiviral medications for treatment and prophylaxis. Antiviral medications are most effective when initiated early in an outbreak. See the section on antiviral medications (below) for additional information.

- Continue to maintain heightened surveillance for febrile and respiratory illness among residents and staff. A list of ill individuals and their symptoms should be kept by the facility, reviewed daily by facility management, and be available for review by the health department.
    - If ill, staff should be excluded from work until at least **24 hours** after fever has resolved without the use of fever-reducing medications.
    - After that time, if other symptoms (e.g., cough) persist, staff should wear a face mask during resident care activities.

- Remind staff to adhere to *standard precautions* during the care of all residents, as influenza is highly transmissible and can be spread via their hands or through contact with environmental surfaces or objects. Frequent hand hygiene and respiratory hygiene should be emphasized for staff and residents.

- Care providers should adhere to *droplet precautions in addition to standard precautions* when obtaining clinical specimens or caring for a resident with suspected or confirmed influenza for at least 7 days after the onset of illness or until 24 hours after symptoms have resolved (whichever is longer).
    - If a resident with suspected or confirmed influenza must be moved to another room or transported to another facility, the resident should wear a face mask during transport, if they are able to do so.

- Ill residents should be placed in a private room with the door kept closed or cohorted together, away from the well, as much as possible. Assign staff members to work with either sick or well residents, but not to circulate between both groups. Personnel entering the room of an ill individual should be limited to those performing essential functions, such as direct care or environmental cleaning.
    - Remind ill residents to stay in their room as much as possible, cough and sneeze into tissues, dispose of used tissues properly, and wash their hands frequently.

- Healthcare workers should take additional precautions when aerosol-generating procedures (e.g., sputum induction, bronchoscopy, elective intubation and extubation, CPR) are being performed on a resident with suspected/confirmed influenza. These procedures should be rare in a long-term care facility, and conducted in an airborne infection isolation room when feasible. A portable HEPA filtration unit can be considered. Limit the number of personnel present during the procedure to only those essential for resident care and support. The door should be closed during the procedure. Staff should adhere to standard precautions (including wearing gloves, a gown, and either a face shield that fully covers the front and sides of the face or goggles). Staff should wear a fit-tested N-95 respirator (or a respirator offering an equivalent or higher level of protection) during the procedure. Unprotected staff should not be allowed in the room until a sufficient time has elapsed to remove potentially infectious particles. Environmental surfaces should be cleaned and disinfected after the procedure.
    - For more information, see https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm.

- Environmental surfaces should be cleaned and disinfected in accordance with standard facility protocols. Special attention should be paid to frequently touched surfaces and objects (e.g., counter tops, door knobs, bedrails, railings, bathroom surfaces, medication carts, and snack carts).

- Facility management should ensure that adequate supplies of soap, paper towels, hand sanitizer, gloves, gowns, face masks, and other supplies are available everywhere they are needed.

- Depending on the extent and severity of the outbreak, it might be necessary to cancel group activities, restrict visitors, and/or consider serving all meals in rooms for all residents.
    - Post signs in the facility and/or distribute letters to family members and visitors notifying them of the outbreak. Sample signs and letters are available from VDH at

http://www.vdh.virginia.gov/epidemiology/influenza-flu-in-virginia/influenza-information-for-healthcare-professionals-and-facilities/.

- If visitation continues, visitors should be instructed to practice good hand hygiene and respiratory hygiene and to stay home if they are sick.
- The local health department can assist with decisions on limiting visitors and restricting group activities.

- If possible, new admissions should be halted and visitation restricted until the outbreak is over (i.e., at least 7 consecutive days without any new cases). When admissions resume, any new residents should receive the influenza vaccine if they have not previously received it.
    - If it is not possible to halt admissions, all persons who are admitted to the facility during an outbreak should receive the influenza vaccine if they have not already been vaccinated with that season's vaccine, should be placed in an unaffected or less affected unit of the facility if possible, and should receive antiviral prophylaxis until one week after the outbreak is over. If possible, they should receive the vaccine and begin taking the antiviral medications prior to admission to the long-term care facility.

Laboratory Testing

Decisions on laboratory testing during a suspected outbreak at a long-term care facility should be made in collaboration with the local health department. Laboratory testing is not always necessary. Reasons for laboratory testing include:

- To confirm that an outbreak of influenza-like illness (ILI) in a facility is caused by influenza. Other respiratory viruses (e.g., rhinovirus, enterovirus, adenovirus, parainfluenza, respiratory syncytial virus) can also cause ILI outbreaks.

- To confirm results of rapid testing. Although rapid antigen tests that distinguish between influenza A and B can provide some useful information, these tests are not considered confirmatory. Further testing at the state laboratory might be recommended.

- To determine the influenza type associated with the outbreak. Knowledge of the influenza type and sub-type [e.g., influenza B, A (H1N1), A (H3N2)] can help public health officials and clinicians determine the best choice of antiviral drugs. , Typing influenza strains is also important for monitoring for the appearance of new viruses.

- Additional laboratory testing, including viral culture, might be needed if symptoms persist despite appropriate antiviral treatment or prophylaxis. Resistance to the antiviral agent used can occur quickly. Individuals with compromised immune systems might be at an increased risk for persistent infection and emergence of an influenza virus with resistance to available antiviral agents.

- If pursuing laboratory confirmation of the outbreak, the local health department will coordinate the submission of several specimens to the Division of Consolidated Laboratory Services (DCLS) for outbreak confirmation. DCLS provides "flu kits," which include materials for the collection and transport of specimens [e.g., nasopharyngeal (NP) swabs, viral transport media]. NP swabs collected from persons within the first two days of illness are the specimens of choice.

Use of Antiviral Medications

Antiviral medications are useful as an adjunct to immunization in long-term care facilities, and should be considered as soon as influenza is suspected within the facility. At the time an antiviral drug is ordered for a resident, their medical record should be reviewed to ensure that there are no known or new contraindications to the drug.

Choice of antiviral drug is based on knowledge of the resistance patterns of the viruses currently circulating in the US and on characteristics of the person receiving the medication (e.g., kidney function, ability to use an inhaler, and potential side effects of the medication).

CDC updates recommendations for the use of antiviral drugs at the beginning of each influenza season and may update those recommendations during the season if new viruses emerge or circulating viruses are found to be resistant to one or more of the available drugs. Current recommendations are located at: http://www.cdc.gov/flu/professionals/antivirals/index.htm. Questions regarding the use of antiviral drugs may be addressed to your local health department.

- Treatment of Suspected or Confirmed Influenza
    - Treatment of an ill person should be started as soon as possible after illness onset, ideally within 48 hours of symptom onset. Early treatment can shorten the duration of symptoms and may reduce the risk of complications from influenza and death.
    - Treatment should not await laboratory confirmation, but should be based on symptoms and presence of influenza in the community.
    - Treatment is recommended as early as possible for any individual with confirmed or suspected influenza who is hospitalized; has severe, complicated, or progressive illness; or is at higher risk for influenza complications
        - Residents of nursing homes and other chronic-care facilities are considered to be at high risk. Other high-risk groups include but are not limited to: persons with immunosuppression or certain medical conditions such as asthma, diabetes, and renal conditions, adults aged 65 years and older, and persons who are morbidly obese.
        - More information on groups at high risk for complications is available on the CDC website: https://www.cdc.gov/flu/about/disease/high_risk.htm.
    - Recommended duration for antiviral treatment is twice daily for 5 days. Longer treatment courses for persons who remain severely ill after 5 days of treatment can be considered.
    - Residents on antiviral treatment should remain on *droplet precautions* until treatment is completed, and should be monitored closely for worsening illness and antiviral drug side effects.

- Prevention of Illness (Prophylaxis)
    - Prophylaxis may be recommended as an outbreak control measure.
        - For residents:
            - During an outbreak, prophylaxis is usually recommended for all residents of the facility who have not developed symptoms of influenza, regardless of influenza vaccination status, because it is often difficult to determine who is immune and who is at risk.
            - Priority should be given to residents living in the same unit or floor as the ill resident(s).
            - Prophylaxis should be administered for a minimum of 2 weeks, continuing

for at least 7 days after the last known case is identified.

- For staff:
  - During an outbreak, prophylaxis can be considered or offered to unvaccinated personnel who provide care to persons at high risk of complications.
  - Prophylaxis should also be considered in personnel for whom influenza vaccine is contraindicated (e.g., person has a severe allergic reaction to a vaccine component).
  - Prophylaxis can also be considered for all employees, regardless of their influenza vaccination status, if the outbreak is caused by a strain of influenza virus that is not well matched by the vaccine.

- Prophylaxis may be used in combination with administration of vaccine. For residents or staff who are newly vaccinated as part of an outbreak response, antiviral prophylaxis may be recommended for 2 weeks after vaccination with inactivated influenza vaccine (also known as the "flu shot"), to allow time for vaccine-induced immunity to develop. If there is concern that the person may not mount an adequate immune response, prophylaxis may be continued for the duration of possible exposure.

- Available Antiviral Drugs
  - The antiviral agents currently licensed for use in the United States are oseltamivir, zanamivir, peramivir, and amantadine, and rimantadine.
    - Oseltamivir, zanamivir, and peramivir are usually effective against both influenza A and influenza B viruses and are the antiviral medications recommended for the current season. Oseltamivir is available as a pill or suspension, zanamivir is available as an inhaled powder using a disk inhaler device, and peramivir is available as an intravenous solution.
    - Amantadine and rimantadine are **not** recommended for use because of high levels of antiviral resistance among circulating influenza A viruses.

References

CDC. Seasonal Influenza Vaccination Resources for Healthcare Professionals. Available at http://www.cdc.gov/flu/professionals/vaccination/index.htm.

CDC. Prevention Strategies for Seasonal Influenza in Healthcare Settings. Available at https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm.

CDC. Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities. Available at http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm.

Antiviral Agents for the Treatment and Chemoprophylaxis of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2011. *MMWR*. Available at https://www.cdc.gov/mmwr/pdf/rr/rr6001.pdf.

Additional information for care providers is available from CDC at http://www.cdc.gov/flu/professionals/.